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Rhodora

JOURNAL OF THE
NEW ENGLAND BOTANICAL CLUB

Conducted and published for the Club, by
REED CLARK ROLLINS, Editor-in-Chief
ALBERT FREDERICK HILL
STUART KIMBALL HARRIS
RALPH CARLETON BEAN
RICHARD ALDEN HOWARD
CARROLL EMORY WOOD, JR.
Associate Editors

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CONTENTS:

Thomas Nuttall's Controversy with Asa Gray. *A. Hunter Dupree* 293
Temporal Variation. *Norman C. Fassett* 303
Tovara in Mexico. *Aaron J. Sharp* 305
Wolffia papulifera in Texas. *S. F. Blake* 306
New Plant Records for Illinois. *Raymond J. Dobbs* 307
Chrysopsis falcata Adventive in Canada. *W. J. Cody* 308
Errata 308
Index to Volume 54 309

The New England Botanical Club, Inc.
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JOURNAL OF

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Vol. 54 December, 1952 No. 648

THOMAS NUTTALL'S CONTROVERSY WITH ASA GRAY

A. Hunter Dupree

Pirates are colorful people, but their business is stealing. Joseph Ewan's parenthetical comment[1] making Thomas Nuttall the victim of piracy raises a vision of Long John Torrey and Captain Kidd Gray gleefully counting botanical doubloons captured from an innocent traveler. Although the bitter controversy of 1841 between Nuttall and Asa Gray burned out long before the principals died, and although no scientific knowledge about the particular plants involved is to be gained by reopening it, the charge of piracy against Torrey and Gray has real importance. Granting that these two men played a preponderant role in building American scientific institutions in the nineteenth century, the charge implies that coercion and robbery were a part of their scientific practice. Since Torrey and Gray concerned themselves with the ethics and standards of a new profession then in its infancy, was piracy a part of those ethics? Or perhaps was hypocrisy the actual accompaniment of the development of scientific standards in America? To establish the fact that Torrey and Gray stole from Nuttall the fruits of his prodigious labors in the West would have a measureable effect on the answers to these questions.

When Thomas Nuttall returned from his journey to the Pacific coast in 1836, he settled down in Philadelphia to work on his own collections. At about the same time Asa Gray, with time on his hands waiting for the sailing of the United States Exploring Expedition, became a junior partner in John Torrey's great project for a *Flora of North America.* The New York State Survey and many extraneous professional duties occupying most of Torrey's time meant that progress on the *Flora* depended on Gray's efforts. When its first number appeared in July, 1838, Nuttall had as yet published none of his Western plants, which were signal additions to the botany of the trans-Mississippi region of North America. For Torrey and Gray to bring out their comprehensive *Flora* without considering Nuttall's novelties would have rendered it spectacularly obsolete the day it appeared. On the other hand, for them to wait for Nuttall would have delayed the *Flora* indefinitely if not eternally.

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[1] Joseph Ewan, "Nuttall's Diary of 1810 and Some Inquirendae (Review)," *Rhodora*, LIV (1952), 236.

To get around the difficulty, Nuttall sent to Torrey and Gray in New York a set of his plants and a manuscript describing the new genera and species. In addition Torrey and Gray consulted the fuller set of Nuttall's plants in the herbarium of the Academy of Natural Sciences, Philadelphia.[2] The evidence of this arrangement appeared immediately in the *Flora,* for in the first genus treated, *Clematis,* Torrey and Gray not only referred to "Nutt.! mss." for three new species but gave the collector's own descriptions and notes directly. Such quotations continued with great frequency through the first number of the *Flora.* This mode of publication was not in itself piracy. Nuttall received full acknowledgment for both his names and his descriptions. Comprehensive recognition appeared in the preface. Nuttall must have been entirely familiar with the process, for A. P. De Candolle had published his manuscript names of *Umbelliferae* under a similar arrangement in the *Prodromus,* Part IV, in 1830. Had Nuttall objected to Torrey's and Gray's practice, he could have withdrawn his manuscript after the first number of the *Flora.* But the references continue in the second part of volume I, published in October, 1838. Since Gray then went to Europe, the completing parts did not appear until June, 1840, giving Nuttall almost two years to voice his displeasure. Far from this, the collector in Philadelphia continued to send descriptions as he worked on his plants.[3] The complete lack of larceny in the process of publication itself suggests that some other irritant estranged these men who were working in apparent harmony.

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[2] John Torrey and Asa Gray, *A Flora of North America . . .* (New York, 1838–43), I, ix–x.

[3] *Ibid.,* I, 671.

Nuttall finally reached the point of publication in his own right when he began to read a paper on his *Compositae* before the American Philosophical Society on October 2, 1840. On December 18, 1840, he finished, the combined paper appearing in the *Transactions*, published the following year.[4] But in November of 1840, between Nuttall's delivery of the two parts, Gray went to Philadelphia "to study the collections there." He, too, was working on the *Compositae* and had a manuscript elaboration of them for the *Flora*. No evidence of coolness at this time appears in Gray's account of his meeting with Nuttall. He looked at the collector's *Compositae*,

> none of which had been sent us,—went through his collection at his desire, and pointed out to him at least half a dozen instances in which he was about to publish old genera as new, assisted him heartily and freely in every way, yielding to him freely in all cases in which we had the same plants to describe, although previously elaborated in my manuscript from our own materials.

According to Gray, the part of Nuttall's paper which he had read at the meeting in October had already gone to the printer. This circumstance formed the basis for the younger man's later ire, for when the sheets reached New York early the next year Gray "found that in one or two instances he had entirely taken to himself my remodelling of genera which he had entirely missed, without the slightest word of acknowledgement or reference to me . . ."[5]

Thus the charge which broke the peace was actually that Nuttall was the pirate!

Nuttall had created a new genus, *Heterostephium*, which after Gray's visit he had referred to *Corethrogyne*, DC. He had also placed some species, once separated as a new genus, in *Berlandiera*, DC.[6] Gray "pointed out the inadvertance in a letter to Mr. N. suggesting to him the propriety of making the proper allusion in a note or otherwise in the forthcoming part of his memoir."[7] To this Nuttall replied, "I am sorry that your letter came to hand after my paper was printed off and there remained no opportunity of making the acknowledgement you required."[8] Gray refused to be satisfied, "informing him that if his course was intentional, I should not tamely submit to it . . ."[9]

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[4] Thomas Nuttall, "Descriptions of New Species and Genera of Plants in the Natural Order of the *Compositae*. Collected in a tour across the continent to the Pacific, a residence in Oregon, and a visit to the Sandwich Islands and Upper California, during the years 1834 and 1835," American Philosophical Society, *Transactions*, VII (1841), 283–356, 357–453.

[5] Asa Gray, New York, to Sir William J. Hooker, May 20, 1841, MS. copy in Gray Herbarium Library, Harvard University, taken from original at Royal Botanical Gardens, Kew.

[6] Torrey and Gray, *Flora of North America*, II, 97–98, 281.

At the same time another matter was breeding trouble between the two. Gray naturally felt indebted to Sir William Hooker, who was not only giving general encouragement to the *Flora* but was shipping whole sections of his herbarium to New York. In January, 1841, the American described to Hooker some of Nuttall's new *Compositae*, and added that the collector "ought to send all these to you, but his *amor pecunia* is rather strong. I know you would desire to have them, even Nuttallian specimens . . ."[10] These sentiments reached Nuttall promptly, possibly in a letter from Gray himself. In March he sent from Philadelphia to the New Yorker 118 specimens of *Compositae* destined for Hooker, saying that "they have cost a good deal of *money*, much *time*, and considerable *risk* in the procuring, for which, what I set for specimens is not like to remunerate me." A touch of bitterness appears in his succinct analysis of Western economics.

> The expence of conveying things over land, the *whole distance* of the continent, and then shipping them round Cape Horn is a very different affair to the making of collections elsewhere. If a *pint* of New England rum which costs 12 cents, has to be charged 3 *dollars* in the mountains, some idea may be formed of the value of other things dragged on horseback over double such a route.[11]

A month later Nuttall wrote to Gray that "I forgot to mention in my last, that I do not wish to be held up as a huckster to Sir Wm. J. Hooker, and I therefore wish you to send him the specimens in *Compositae* I sent you, as a present from myself."[12] This Gray immediately did, winning his point at the cost of increased rancor. In the complete collapse of mutual respect, the former intimate collaboration afforded much fuel for mis-

[7] Gray to Hooker, May 20, 1841.

[8] Thomas Nuttall, Philadelphia, to Asa Gray, March 27, 1841. MS. in historic letter file, Gray Herbarium Library.

[9] Gray to Hooker, May 20, 1841.

[10] Asa Gray, New York, to Sir William J. Hooker, January 15, 1841. MS. copy in Gray Herbarium Library.

[11] Nuttall to Gray, March 27, 1841.

[12] Thomas Nuttall, Philadelphia, to Asa Gray, April 23, 1841. MS. in historic letter file, Gray Herbarium Library.

understandings, once dismissed as unimportant but now rekindled.

Nuttall's first reaction was to call for the return of his manuscripts "with the Academy's collection when you send them."[13] He had a good bit to say about *Corethrogyne,* stating

> that Mr. Gray assured me one of the species I had collected in California was the plant intended by De Candolle in his prodromus, otherwise (in the absence of a specimen) I should greatly doubt their identity. I had made the remark concerning this plant (of which I had been obliged to form a distinct genus) that it appeared wholly to agree in habit and nearly in character with Corethrogyne, but that the receptacle was certainly without paleae.[14]

After further discussion Nuttall reached the point that "I . . . now perceive (when *too late*), what I had suspected, that my genus *Heterostephium* is a good and distinct one, and ought not to have been abandoned, altho' it appears to be almost isomorphous with *Corethrogyne.*" Although he never admitted that Gray deserved any credit for suggesting the identity of the genus as a whole, he gave in just perceptibly concerning one of the species, revealing incidentally how closely the two had once worked together. "I am not aware that *Aster filaginifolius* was a suggestion of yours, at the same time I have not the smallest objection to allow it. It was described in Beechy's voyage Suppl. We read it over together. I used my own judgment on the occasion."[15]

Gray had to prod hard to get an answer on *Berlandiera,* "the chief thing in which I felt aggrieved."[16] In spite of his delay, Nuttall's answer here was nearer the question. "In regard to Berlandiera, I say that without other means of comparison, I did not suspect that it was the same genus . . . , and this ought to have been mentioned in my paper . . ." thus admitting the need for the acknowledgment that Gray had been seeking. But he went on to say that he had referred the cognate species to a single group "certainly *without any aid* from your mss. *Not a line was*

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[13] Nuttall to Gray, March 27, 1841.

[14] Thomas Nuttall, Philadelphia, to Asa Gray, April 7, 1841. MS. in historic letter file, Gray Herbarium Library.

[15] Nuttall to Gray, April 23, 1841.

[16] Asa Gray, New York, to Thomas Nuttall, April 14, 1841. Draft of reply marked "sent April 16" in Gray's handwriting, historic letter file (Nuttall folder), Gray Herbarium Library.

altered after seeing or hearing your manuscript."[17] Nuttall evidently to the last thought Gray was charging him with taking descriptions of various details, not realizing that the names themselves of the genera were the points at issue.

Nuttall's essential answer to Gray's charges was not defense but a vigorous counteroffensive. In the first place he charged Gray with not accepting various things in his manuscript. For example Gray had shifted *Cosmidium* from one division to another, had given the name *Tolmeia* to a genus Nuttall had named otherwise, had made a *Ligusticum* from California into the new genus *Deweya*, and had provided many other "invidious examples."[18] This boiled down to the charge that Gray had not in all cases followed Nuttall exactly.

In the second place he made a severe indictment of Gray's scientific courtesy. "I was, I had thought, in consideration of what I had done, *not in the closet* but in the *field*, entitled to expect, the same privilege of consulting Dr. Torrey's herbarium that you have of consulting the Herbarium of the Academy. It is now determined, I find, that I shall be obliged to work in the *dark*, and somebody will then come after and hold up my unavoidable errors and mistakes as a beacon on which to establish something de novo."

Finally Nuttall reached the point of complaining about the collaboration itself. "For respecting many of my manuscript names (given in great haste in the herbarium of the Academy) I certainly have no occasion to *thank* you. In regard to the names of things recently introduced into that collection from the West they cannot be taken at all as the names I shall ultimately employ and therefore the quoting of them is to me an essential injury, as it tends to create confusion and error."[19] This charge, which incidentally is inconsistent with the first one claiming neglect, carries at long last the implication of piracy mentioned by Ewan. It is, however, much less timely and explicit than Gray's accusation against Nuttall, and it got a much stronger answer.

Gray dealt with the first charge "*seriatim*" showing in each case that Nuttall's manuscript had been set aside only for sufficient reasons, often drawn from material on hand from earlier collectors such as David Douglas. On the second charge Gray had

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[17] Nuttall to Gray, April 23, 1841.

[18] Nuttall to Gray, April 7, 1841.

[19] *Ibid.*

> only to say that neither Dr. Torrey nor myself have ever refused you the privilege of consulting freely our collections, nor have we had the intention of so doing. On the contrary they have always been at your service. The insinuation that *somebody* wishes to oblige you to work in the dark, and then form a reputation for science by holding up your unavoidable errors . . . is as untrue as it is unworthy of you.

Concerning the third charge,

> you say you have no occasion to thank me for respecting your mss. names. Certainly not. I do not expect thanks for doing that which is not only mere justice, but is required by the courtesy of science. No botanist, living or dead, has reason to complain of me in this matter. Have Dr. Baldwin's manuscript names been equally respected by all botanists?

Then Gray made a cryptic reference, "Do you remember a genus called *Petalanthera* in Dr. Torrey's herbarium?" To this he added and then struck out the quotation, "'Let the galled jade wince &c.'"[20]

Even if Gray deleted this imagery, Nuttall reacted violently to *Petalanthera*. This plant, collected by Edwin James, Torrey had named in manuscript but had sent to Robert Brown in England before publishing. Brown identified it with *Cevallia*, but in the meantime Nuttall published it[21] under the same name Torrey had given—*Petalanthera*. Nuttall considered Gray's mere mention "a *most grave* insinuation or charge." To the "*enquiry* whether I ever saw a genus in Dr. Torrey's Herbarium called *Petalanthera*!" he answered "as before the last tribunal, that *I certainly never did*!!! I never saw the name in any other than my own or the Academy's collection and received from Dr. T. the specimen I had without any attempt at a name of any kind and soon after he had received the specimens from Dr. James." As to the use of the same name, Nuttall claimed that it "is an appropriate one and must have been arrived at independently of each other . . . ," a pure coincidence. Gray's injection of this genus into the controversy did indeed reveal a very old fester. Nuttall continued that "you have harbored against me this unjust and injurious as well as *false* suspicion probably for *many* years. It has come out. I am obliged to you for the disclosure *at last*!"[22]

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[20] Gray to Nuttall, April 14, 1841.

[21] Thomas Nuttall, "Description of Some of the Rarer or Little Known Plants Indigenous to the United States," Academy of Natural Sciences of Philadelphia, *Journal*, VII (1834), 107.

Nuttall's letter of April 23, which contained these remarks, shows many signs that it was written by a man under great tension, and in a postscript he himself recognized this. "If I have used any harsh and improper expressions, I hope you will excuse them, and attribute them to an undue excitement." A passage which he struck out but left still legible reveals much concerning his attitude not only while conducting this controversy but also while he was making up his mind to leave the United States.

> From circumstances, over which I have *no control*, I am obliged to use the utmost economy to live. I have sold everything I am able, to keep out of debt, and I therefore, tho' reluctantly, desire Dr. Torrey, to return me the dried plants, sent to him, when done with, as, having given away one set, (to the Academy of Nat. Sciences.) it is as much as I owe to a *country* that never patronised or assisted me in any thing, and to explore which I have sacrificed much property and spent nearly my whole life. On returning these with my manuscripts, I will, if desired, send back 3 or 4 odd numbers of your Flora for which I have now no further use.

Although Gray wrote one more letter,[23] the controversy sputtered to a close, and at the end of the year Nuttall sailed to England to live permanently. Torrey's and Gray's *Flora*, for many reasons entirely unconnected with this controversy, did not progress beyond the *Compositae*. In 1884 Gray wrote that "probably few naturalists have ever excelled Nuttall in aptitude for . . . observations, in quickness of eye, tact in discrimination, and tenacity of memory." But he also said that "there are obvious points of resemblance between the later writings of Nuttall and Rafinesque, which might tempt us to continue the parallel;—but in scientific knowledge and judgment he was always greatly superior to that individual."[24] Complimentary as this was, many naturalists in the 1840's felt that even a remote comparison with Rafinesque was damning. When Nuttall returned to the United States and met Gray again in 1848, they were at least outwardly cordial.[25] In 1856, while Nuttall was still alive, Gray made a final private statement to Charles Wilkins Short on a controversy now dead for fifteen years.

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[22] Nuttall to Gray, April 23, 1841.

[23] Asa Gray, New York, to Thomas Nuttall, June 4, 1841. Draft of reply in historic letter file (Nuttall folder), Gray Herbarium Library.

[24] Asa Gray, "The Longevity of Trees," *North American Review*, LIX (1844), 193.

> As to Nuttall, he is a truthful man, no doubt, and an interesting one. If I ever spoke disrespectfully of him (as I may have) I was to blame. His Genera was an admirable work for its day, and much the best thing he ever did. His later works and memoirs fell off in character, sound judgement, and conscientiousness—very much indeed, and there are things about them that would tempt one who followed closely after him to compare him with Rafinesque; but it would not be just. If Nuttall had kept up to the promise of *Genera N. Amer. Plants* he would have been the great expounder of American botany.[26]

The inapplicability of such terms as piracy to these two sensitive, upright, and angry gentlemen is clear. Torrey and Gray certainly had a right to publish Nuttall's manuscript names and descriptions, for which they gave full credit. Had they not done so, many more of his Western plants would have remained unpublished. In the taxonomic charges and countercharges the younger man rather more than took care of himself. On the other hand, no one raised on *Two Years before the Mast* can fail to sympathize with Nuttall and to see that he needed help more than refutation. The controversy appears more a result than a cause of some deep and bitter emotional disturbance within him.

Too nice a solicitude for abstract justice in a quarrel long past is both futile and unnecessary. Nevertheless, the historian who sees this controversy from a broader point of view can surmise that the protagonists moved under the impulse of forces they themselves only faintly recognized. Torrey and Gray's *Flora of North America* was a new kind of enterprise on the American scene. It called for the final determination of taxonomic questions to be made in the United States and not left to Europeans. This placed such a heavy burden on the available manpower that a practical separation of duties between the field collector and the herbarium specialist was arising in spite of the wishes of both. Nuttall in the old way was still trying to do both, but he could not bring to his herbarium work the tools which Torrey and Gray had developed. While Nuttall had gone to the ends of the earth, Gray had gone to Europe and had dug to the bottom of many North American botanical problems whose answers lay in European herbaria.

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[25] Asa Gray, Cambridge, to George Engelmann, March 15, 1848. Typed copy in the Gray Herbarium Library.

[26] Asa Gray, Cambridge, to C. W. Short, October 10, 1856. W. C. Coker, ed., "Letters from the Collection of Dr. Charles Wilkins Short," Elisha Mitchell Scientific Society, *Journal*, LVII (1941), 157.

The side issue of plants for Sir William Hooker is indicative of another aspect of Torrey's and Gray's enterprise. They aimed to establish botanical autonomy in the United States by co-operation with Europe, not by competition. Hooker was not only moving over to make room in the upper hierarchy of botany where decisions had real authority but also was giving them active encouragement. Early in 1842 he wrote that "Nuttall ought to place all his western plants in your hands for Dr. Torrey & you to describe & to exercise your own unfettered judgements in the determining of them."[27] Torrey and Gray, earning their authority over the plants of North America by doing work comparable in excellence to the best in Europe, were exceedingly careful to mesh their practices and interpretations with those of men such as Hooker and to be generous to a fault in their dealings with them.

Nuttall's plaints about being "in the dark" and making "unavoidable errors" focus on another institutional change in the structure of America itself. Philadelphia, the metropolis of the colonies and the cultural center of the early republic, found herself outstripped by 1840. The natural sciences had given added luster to Philadelphia in her great days, but like other things they deserted in her relative decline. Nuttall was the last who, like the Bartrams before him, used Philadelphia as a base for the botanical exploration of North America on a continental scale. The immediate future lay with New York and Boston, where Torrey and Gray gathered the tools for greatly accelerated botanical production which could keep up with the fruits of American expansion in the two decades ahead.

When institutions change, those who do not change with them feel the pinch. The mountain men, whom Nuttall saw drinking three-dollar rum in the beaver country, are good examples, highly skilled and specialized, of those passed by in the rapid changes in America in the 1840's. The spread of settlement and the decline of the beaver trade left many of them, although young in years, with their way of life destroyed. Nuttall, whose great glory was to explore the West when it was open only to mountain men, found himself, like them, old before his time in 1841.

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[27] Sir William J. Hooker, Kew, to Asa Gray, January 23, 1842. MS. in historic letter file, Gray Herbarium Library.

TEMPORAL VARIATION

NORMAN C. FASSETT

TAXONOMISTS have learned to watch for several types of intraspecific variation, other than that which involves varieties and subspecies in different geographic regions. Among these are:

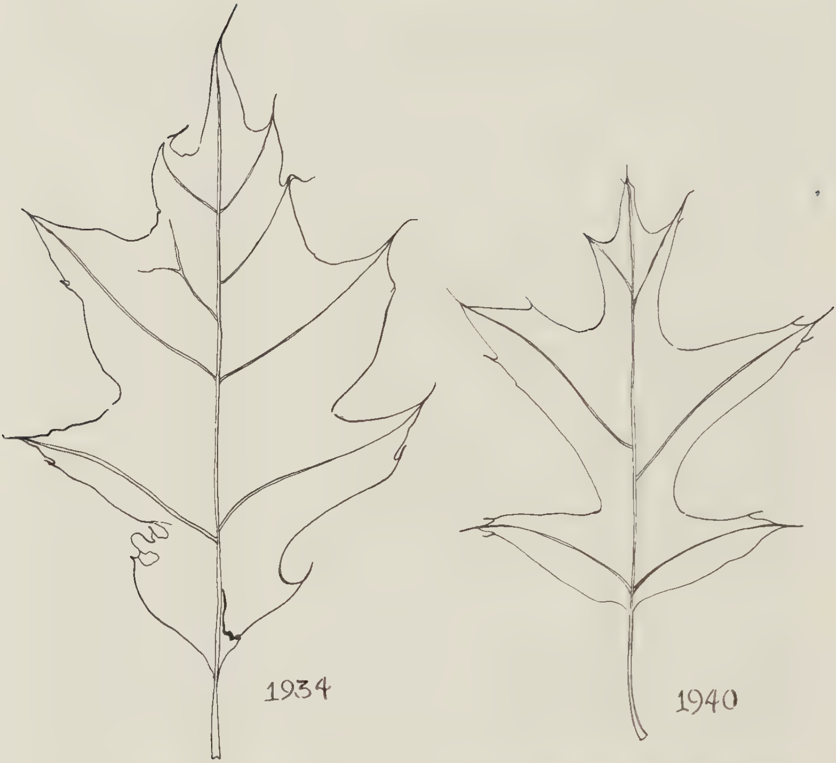
1. Genetic variation—the individual, or personal, characters of each plant or clone. This was discussed by Dr. Edgar Anderson for Iris (1928); clonal characters may easily be observed in such plants as *Podophyllum peltatum*, where each clone has a slightly different leaf pattern, in *Rhus typhina* or *R. glabra* where the general nature of the panicle differs slightly from clone to clone, or even in *Geranium maculatum* where close inspection shows a different cutting on the leaves of each clump.

2. Variation due to habitat. This is particularly obvious in certain aquatics; a classic example is in the amphibious Polygonums where the aquatic and terrestrial phases of one clone are so different that they were once described as separate species.

3. Variation on different parts of the same individual. Foliage may normally be different, for example, on flowering and sterile branches, between sucker shoots and old stems in *Populus*, between juvenile and mature foliage in *Juniperus* or *Eucalyptus*, or on the upper and lower parts of the stem in *Aster cordifolius* and its relatives. The leaf types on different kinds of shoots and at different levels on the same shoot have been discussed in detail by Dr. C. R. Ball (1943).

Less frequently are most of us in a position to observe what might be called:

4. Temporal variation, or variation in homologous parts of the same individual in different years. In the herbarium of the always stimulating Dr. C. C. Deam of Bluffton, Indiana, are two sheets, collected in different years, both from the same branch of an oak tree. The one collected in 1934 is a remarkably good match for Fig. 919 in Gray's Manual, ed. 8, representing *Quercus rubra.* In 1940 the same branch had leaves almost as



Figs. 1 and 2. Leaves collected in different years from the same branch of an oak.

Del. Katherine Gimmler

closely matching Fig. 920, *Q. palustris.* In both collections the branches were fruiting. The data on the two labels are as follows:

Flora of Indiana. St. Joseph County. C. C. Deam. *Quercus palustris* DuRoi. No. 55,573, Sept. 14, 1934. A tree about 8 inches in diameter on the north bank of the Kankakee River about 100 ft. west of the Nasturtium or Mayflower road about 3½ miles southwest of South Bend. On farm of Geo. Dodd. Note that the leaves have very short lobes. Specimen cut with long pruning shears from the tip of long branches. E. J. Palmer says he thinks this is a narrow-leaf form of the species.

Flora of Indiana. St. Joseph County. C. C. Deam. *Quercus palustris* DuRoi. No. 55,573 equals 60,214. Oct. 1, 1940. A tree about 8 inches in diameter on the bank of the Kankakee River near Mayflower Road about 3½ miles southwest of South Bend. The leaves from this tree taken Sept. 14, 1934, were not lobed to the middle but the leaves are quite normal this year.—DEPARTMENT OF BOTANY, UNIVERSITY OF WISCONSIN.

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BALL, C. R. 1943. Castanea 8: 67–71.

TOVARA IN MEXICO.[1]—When the recent monograph on *Tovara* was completed and published in the current volume of RHODORA,[2] material of this genus from Mexico was not then available to its author. Three localities on the eastern escarpment of the Mesa Central are represented in the collections of Dr. H. E. Moore, Jr., and myself.

The Mexican specimens are relatively uniform and although differing from much of *T. virginiana* (L.) Raf. of eastern United States by having smaller leaves (rarely over 10 cm. in length) and roseate calices, they fall within the limits of variation to be found within populations of *T. virginiana.* A collection (*Burns G-39*) in the herbarium of the University of Tennessee from Townsend, Blount County, Tennessee, differs little from the Mexican material except for the paler calyx.

In determining the Mexican collections as to species, much of the Asiatic material of *Tovara* from the Gray Herbarium and the U. S. National Herbarium was examined. It is somewhat difficult to separate *T. virginiana* and *T. filiformis* (Thunb.) Nakai because of the great variability within each and the overlapping of characters. This overlap is indicated by Dr. Li's key. Further collecting may demonstrate that *T. virginiana* and *T. filiformis* are one highly polymorphic species. *T. filiformis* var. *kachina* (Nieuw.) Li and *T. apoensis* (Elmer) Li seem much more distinct.

For the benefit of future workers, the collection data from the Mexican specimens are cited below.

HIDALGO: About Lake Atexco below Molango, 1400 m., *Moore 3478.* Between Tenango de Doria and Santa María Temescalpa, 4000 ft., *Sharp 45943.* Moore's specimens are to be found at the Bailey Hortorium and the Gray Herbarium; Sharp's, in the herbaria of the University of Tennessee and the Instituto Biológico de México. **PUEBLA:** Near Huauchinango, 4900 ft., *Sharp 441204*. This collection is represented at the Gray Herbarium, and the herbaria of the Smithsonian Institution, the Instituto Biológico de México and the University of Tennessee.

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[1] Contributions from the Botanical Laboratory, The University of Tennessee, N. Ser. 145.

[2] Li, Hui-Lin. 1952. The Genus Tovara (Polygonaceae). RHODORA 54: 19–25.

My sincere thanks are given to the Director of the Gray Herbarium and the Curator of the U. S. National Herbarium for the loan of *Tovara* material.—Aaron J. Sharp.

Wolffia papulifera in Texas.—In the eighth edition of Gray's Manual (p. 387. 1950), the late Prof. M. L. Fernald assigned to *Wolffia papulifera* C. H. Thompson a range from Virginia to Illinois, south to Kentucky, Missouri, Kansas, and Mexico. The year before the Manual was issued it had been recorded from Columbia County in north central Florida by Don L. Jacobs (Amer. Midl. Nat. **42:** 110–111. fig. 1. 1949), who suggested that it should be looked for in the region from Georgia to Texas and Missouri. At the Florida station it was accompanied by *Wolffia columbiana* Griseb. and *Lemna perpusilla* Torr., both of which were in abundant flower on 20 September, although no flowers of *W. papulifera* were seen. Since that time it has been reported from southwestern Georgia by R. F. Thorne (Castanea **16:** 35. 1951), and from several localities in Maryland by Neil Hotchkiss (Rhodora **53:** 92. 1951). It can now be recorded from Texas.

The Texas occurrence was on the ranch of Mr. Hamilton Wilson, in and along the west line of Kerr County (south-central Texas), about 20 miles west of Hunt, 23 miles NNE of Leakey, and 90 miles NW of San Antonio, on the divide between the headwaters of the Rio Frio and the South Fork of the Guadalupe River. Abundant fresh material, including many plants in flower and fruit, was sent in Nov. 1950 to the Bureau of Plant Industry, Soils, and Agricultural Engineering by Dr. R. D. Radeleff, veterinarian at the Bureau of Animal Industry station at Kerrville. According to information supplied in February, 1951, by Dr. Radeleff, the plant was first noticed by Mr. Wilson in small numbers two years before on a small fresh water pond fed by springs and with an underground outflow. During the past year the plant had reproduced rapidly, on still days completely covering the pond, which is about 30 by 300 ft. and less than 3 ft. deep at all points. With a light breeze, the plants would accumulate to the depth of several inches on the lee side. The cattle, in order to drink, would often submerge their faces up to the eyes in the water, producing the curious phenomenon of green faces on red cattle, from the abundance of the clinging *Wolffia.* When fall calving began almost all the calves were still-born. Attributing this to the influence of the *Wolffia,* Mr. Wilson shifted his cattle to another pasture and found that the trouble ceased. He had not previously had any difficulty of this sort with his cattle. Later, at the suggestion of Dr. Radeleff, he treated the water with copper sulphate at the rate of 10 parts per million in the estimated volume of water and apparently eliminated the plant, but not long afterward it reappeared and again covered the pond. About a year later he again put his cattle in the old pasture about the pond but had no further difficulties with them, so that the *Wolffia* was evidently not responsible for his previous losses.—S. F. BLAKE, DIVISION OF PLANT EXPLORATION AND INTRODUCTION, U. S. D. A., BELTSVILLE, MARYLAND.

NEW PLANT RECORDS FOR ILLINOIS.—These plants, which were collected by the author in Henry County, comprise new additions to the known flora of Illinois. Specimens of all of these plants were determined at, and deposited in, the Gray Herbarium of Harvard University.

HETEROTHECA SUBAXILLARIS (Lam.) Britt. & Rusby—Along railroad tracks in Section 7, Edford Township, September 17, 1944.

ELAEAGNUS ANGUSTIFOLIA L.—The Russian Olive seems to be rapidly spreading from cultivation in Henry County. On June 16, 1945 a small tree was found on the high terrace border of the Geneseo Creek in Section 28, Geneseo Township, and on June 14, 1951 a larger tree was found in a dense roadside thicket in Section 32, Kewanee Township.

GALIUM MOLLUGO L.—My first specimens were found along railroad tracks in Section 18, Geneseo Township, June 9, 1948. The specimens which were deposited in the Gray Herbarium were collected from the same colony, June 26, 1951.

HYPERICUM DISSIMULATUM Bickn.—Low wet meadow in Section 16, Phenix Township, August 14, 1947, with the suggestion from the Gray Herbarium that it confirms, at least in part, the opinion expressed by the late Professor M. L. Fernald in the eighth (1950) edition of Gray's Manual, that it might be a hybrid of either *H. boreale* (Britt.) Bickn. or *H. mutilum* L. and *H. canadense* L.

VIBURNUM RECOGNITUM Fern.—Low wet woodlands bordering Crescent Lake in Section 15, Oxford Township, July 15, 1947.—RAYMOND J. DOBBS. GENESEO, ILLINOIS.

CHRYSOPSIS FALCATA ADVENTIVE IN CANADA.[1]—In October, 1949, a number of plants were received for identification from Dr. Fletcher Bell Sharp, of Toronto. Included in the lot was a specimen of Golden Aster, *Chrysopsis falcata* (Pursh) Elliott, collected along the Canadian National Railway tracks west of Toronto, Ontario, on August 25, 1949.

C. factata grows as a native in sandy soil on the Atlantic Coastal Plain from southeastern Massachusetts to New Jersey. Its presence in Canada has not previously been reported, hence its chance occurrence near Toronto is worthy of note. The plant had what appeared to be good fruit and, since it is a perennial, it is quite possible that the species may persist and spread as a weed. The specimen has been preserved in the Divisional Herbarium.—W. J. CODY.

[1] Contribution No. 1177 from the Division of Botany and Plant Pathology, Science Service, Canada Department of Agriculture, Ottawa.

Volume 54, no. 647, including pages 261–292, was issued 4 December, 1952.

ERRATA

Page 8, line 25; *for* expermental *read* experimental.
Page 11, line 22; *for* obvous *read* obvious.
Page 36, line 23; *for* obtiuscula *read* obtusiuscula.
Page 38, line 32; *for* untrinque *read* utrinque.
Page 41, line 6; for *Cochleari* read *Cochlearia.*
March cover; for **Phyteographic** read **Phytogeographic.**
Page 98, in the key; *for* 2b *read* 2d; *for* 2c *read* 2e, *for* 2d *read* 2c, *for* 2e *read* 2b.
Cover of No. 641; *for* Davis *read* Davies.
Page 123, running head; *for* Davis *read* Davies.
Page 125, line 18; for VIOLASCENS read VIOLESCENS.
Page 128, line 9; for OBLONGIFOLIA read OBLONGIFOLIUM.
Page 164, last line; for **642** read **641**.
September cover; for **Brickelias** read **Brickellias.**

INDEX TO VOLUME 54

New scientific names and combinations are printed in boldface type

Abies, 233; bracteata, 75, 76; venusta, 74
Acalypha gracilens, 255
Acer saccharum, 64
Achillea borealis, 222; Millefolium ssp. atrotegula var. atrotegula, 222
Acroschizocarpus, 86, 87, 88, 92, 110; Kolianus, 86, 92, 114
Adiatum pedatum, 167
Adonis autumnalis, 253
Aeration on the Longevity of Laminaria, The Effects of Forecd, 288
Agarum cribosum, 276
Agave virginica, 172
Agropyron albicans, 196; var. **griffithsii,** 196; inerme, 196; pseudorepens, 196, f. aristatum, 211; spicatum, 196; trachycaulum f. **pseudorepens,** 196; var. **latiglume,** 196; var. unilaterale f. **andinum,** 196; violaceum var. andinum, 196; var. latiglume, 196
Alaska, Cochlearia Officinalis Arctica in the Vicinity of Point Barrow, 40; Contributions to the Flora of, No. 2, Some New Entities in the Flora of the Brooks Range Region, 35
Alectoria ochroleuca, 277
Allium vineale f. compactum, 252
Alnus serrulata, 253; f. noveboracensis, 253
Alopecurus alpinus, 48, 51, 216
Alyssum Lescurii, 186; Shortii, 191
Ambrosia psilostachya, 181
Amorpha canescens, 235
Anchusa officinalis, 210
Andromeda tetragona, 55, 283
Angelica atropurpurea, 227; venenosa, 128
Antennaria alpina, 53; angustata, 53; rosea, 291
Antennaria rosea Greene in the Lake Superior Region, 291
Apios americana f. pilosa, 212
Aplodon Wormskioldii, 277
Arabidopsis mollis, 163
Arabis, 12, 13, 88, 162; blepharophylla, 13; cobrensis, 13; Crandalli, 13; crucisetosa, 13; Cusickii, 13; dispar, 13; furcata, 13; glaucovalvula, 13; Hookeri, 162; Koehleri, 13; Parishii, 13; perennans, 13; platysperma, 13; rectissima, 13; Schockleyi, 13; suffrutescens, 13
Aralia nudicaulis, 64; racemosa, 175, 209
Arctagrostis latifolia, 51
Arenaria peploides, 40, 203; rubella, 49, 51, 278
Arizona Flora (Review), 83
Armeria maritima, 141
Arnica chionopappa, 201, 222; lonchophylla, 200, 201; wilsonii, 200, 201, 202
Arnica Wilsonii Rydberg and Its Significance, The Distribution of, 200
Artemisia ludoviciana var. latifolia, 129
Arundinaria gigantea in Illinois, Flowering, 82
Arundinaria gigantea, 82, 83; tecta, 83
Asclepias incarnata f. albiflora, 210; pedicellata, 176
Ascyrum hypericoides var. oblongifolia, 128
Aspidium fragile, 48
Asplenium trichomanes, 167
Aster cordifolius, 303; filaginifolius, 297; lineariifolius, 130; mirabilis, 181; novae-angliae, 254; puniceus var. firmus f. lucidulus, 254
Astragalus **hamiltoni,** 159; lonchocarpus, 160; macer, 160; **spectabilis** 160, 161
Astragalus (Leguminosae) from Eastern Utah, Novelties in Hermidium (Nyctaginaceae) and, 158
Athyrium pycnocarpon, 166
Atriplex, 127
Atropis, 43
Aulacomnium turgidum, 141
Azalea procumbens, 53

Baccharis halamifolia, 130
Beech-drops, A Color-form of, 140
Beetle, A. A., New Names for Wyoming Wheatgrasses, 195
Betula glandulosa, 222; papyrifera, 290; pumila, 222
Bidens cernua, var. minima, 228; connata var. anomala, 213; hyperborea, 203
Bivonea, 173
Blake, S. F. Wolffia papulifera in Texas, 306
Blomquist, H. L., Fox, W. B. and Godfrey, R. K., Notes on Distribution of North Carolina Plants —III, 165
Boivin, B., The Distribution of Arnica Wilsonii Rydberg and Its Significance, 200
Borrichia frutescens, 56
Borrichia frutescens from Chesapeake Bay, 56
Botanist, Canada's Centenarian, 194
Botrychium dissectum, 223; f. obliquum, 223; matricariaefolium, 223; simplex, 223; virginianum, 64
Brassica, 183
Braya, 141; aenea, 38; alpina, 38; var. americana, 37; americana, 37, 38; arctica, 52; **Bartlettiana,** 36, 38; Fernaldii, 37, 38; Henryae, 38; purpurascens, 49, 52, 54; var. dubia, 52, 283
Brickellia glomerata, 231; hebecarpa, 231; Kellermanii, 232; oliganthes, 229, 230, 231, 232; reticulata, 229, 230, 231, 232; scoparia, 231; venosa, 232; verbenacea, 229, 231, 232
Brickellias, Some Rarely Collected Mexican, 229
Bromus purgans f. laevivaginatus, 211
Brooks Range Region, Alaska, Some New Entities in the Flora of the, 35
Buchnera americana, 178; floridana, 177, 178
Bulbostylis, 229; floridana, 170; reticulata, 230
Calder, J. A., Notes on the Genus Carex I: A New Species of Carex from Western Canada, 246
Calla palustris, 226
Callen, E. O., Studies in the Genus Euphrasia L. III, 145
Calliergon Richardsoni, 157
Callitriche, 286, 287
Caloplaca elegans, 277
Campanula aparinoides, 259
Camperdown Elm, The Propagation of the, 55
Camptosorus rhizophyllus, 166
Camptothecium nitens var. falcifolium, 158
Canada, Notes on the Genus Carex I: A New Species of Carex from Western, 246; Chrysopsis falcata Adventive in, 308
Canada's Centenarian Botanist, 194
Capitularia gracilis γ Capitularia macroceras, 267
Cardamine bellidifolia, 52; digitata, 260; Douglasii, 172; hyperborea, 260; Richardsonii, 260
Cardamine digitata Richardson (Cruciferae), 260
Cardaria, 183
Carduus megacephalus, 30; Nebraskensis, 32, 34, 35; plattensis, 32, 34; var. spinosior, 32, 34; undulatus, 30; var. megacephalus, 30
Carex I: A New Species of Carex from Western Canada, Notes on the Genus, 246
Carex atherodes, 252; atratiformis, 225, 246, 248, 249; bipartita var. amphigena, 203; bromoides, 170; capillaris var. major, 225; carolinana, 251; castanea, 225; Chapmanni, 171; complanata, 251; conoidea, 163, 225; cristatella, 171; deflexa, 225; divisa, 171; glareosa, 203; Joori, 171; katahdinensis, 163, 164; laeviconica, 252; leptalea, 254; louisianica, 171; mackenziei, 202; maritima, 202; misandra, 278, f. flavida, 278, f. ochrolochin, 278; norvegica, 202; ovata, 249; **ray-**

mondii, 246, 248, 249; sparganioides, 171; spicata, 225; straminea, 252; tonsa, 225; trichocarpa, 252, 254, 259; verrucosa, 172
Carya ovata, 132, 134; tomentosa, 132
Cassiope tetragona, 40, 55, 283
Castanea dentata, 64
Cedrus libanensis, 68
Cellulose Acetate in the Herbarium, Uses of, 286
Cenomyce ecmocyna, 261, 262; gracilis var. chordalis, 262, 263; var. elongata, 262, 263, 264; rangiferinus, 276
Cerastium alpinum 49, 51, 54, 216, 278, 283; beeringianum, 41; viscosum f. apetalum, 253
Cetraria cucullata, 277; delisei, 276; islandica, 276
Chamaesyce missurica var. calcicola, 127
Chesapeake Bay, Borrichia frutescens from, 56
Chicago Region, Plants New to Illinois and to the, 208
Chrysanthemum integrifolium, 53
Chrysopsis falcata, 308; pinifolia, 180
Chrysopsis falcata Adventive in Canada, 308
Church, G. L., The Genus Torreyochloa, 197
Cibotarium divaricatum, 184; macropetalum, 184; macrum, 184
Cirsium, 29; arvense, 33; brevifolium, 34; canescens, 29, 32, Plate 1183, 33, 34, 35; flodmanii, 31, 33, 34, 35; Lettermanii, 32; megacephalum, 30, 31; muticum, 254; nebraskense, 32; palousense, 34; plattense, 32, 33, 35; plattensis, 29, 33; undulatum, 29, 30, Plate 1182, 31, 34; undulatum var. megacephalum, 30, 31
Cirsium: C. undulatum and C. canescens, Nuttall's Great Plains Species of, 29
Cladonia alpestris, 276; amaurocraea, 269; chlorophaea, 266; cryptochlorophaea, 266; ecmocyna, 261, 262, 263, 264, 265, 266, 270, f. contorquescens, 266, 268, f. foveata, 267, f. gracilescens, 266, 269, f. nigripes, 266, 269; var. **intermedia,** 267, 270; var. macroceras, 262, 266, 267, 268, 269, 270; var. **nigripes,** 269; elongata, 263, 264; f. ecmocyna, 261, 264, 269, 270; f. intermedia, 267, 270; f. laontera, 268; var. esquamosa, 268; var. squamosa f. laontera, 269; gracilescens, 263; gracilis, 261, 262, 263, 264, 265, 266; chordalis, 269; gracilis f. rostrata, 267, f. subdilacerata, 267; var. chordalis, 263, 264, 265, 266, 267; f. amaura, 270; gracilis var. dilatata, 263, 266; var. ecmocyna, 261, 267; f. nigriceps, 267, 269, f. rostrata, 267, 268; f. subdilacerata, 267; gracilis elongata, 268; var. elongata, 264, 265, 266, 267, 268; f. chordalis, 269; f. laontera, 269; f. macroceras, 269; f. subdilacerata, 267; gracilis f. ecmocyna, 261, 262; gracilis var. elongata, 262, var. macroceras, 262; Grayi, 266; lepidota, 263
Cladonia ecmocyna in North America, 261
Clausen, R. T., Suggestion for the Assignment of Torreyochloa to Puccinellia, 42
Clematis verticillaris, 201, 202
Cnicus plattensis, 32; var. spinosior, 32; undulatus, 29, 30, 31; var. canescens, 29, 32, 34; var. megacephalus, 29, 30; var. ochrocentrus, 29; var. Grahami, 29
Cnidoscolus stimulosus, 173
Coccoloba, 78; curtissii, 77, 79; diversifolia, 79; floridana, 77, 78, 79; laurifolia, 77, 78, 79
Cochlearia, 40, 41, 42; fenestrata, 52; officinalis, 41, 52; var. groenlandica, 49; f. crassa, 52; var. oblongifolia, 52; ssp. arctica, 40; sessifolia, 40
Cochlearia officinalis arctica in the Vicinity of Point Barrow, Alaska, 40
Cody, W. J., Chrysopsis falcata Adventive in Canada, 308

Color-form of Beech-drops, A, 140
Color-forms of the May-apple, 131
Colpodium latifolium, 51
Comandra Richardsoniana, 226
Conopholis americana, 227
Contributions to the Flora of Nova Scotia, 220
Convallaria majalis, 208
Convolvulus sepium f. coloratus, 257; f. malachophyllus, 257
Corallorhiza, 140
Coreopsis tripteris var. deamii, 130
Cornicularia ochroleuca, 277
Cornus florida, 64, 132; f. rubra, 256; suecica, 227
Cosmos sulphureus, 259
Crataegus, 14, 17
Crepis, 17; nana, 141
(Cruciferae), Cardamine digitata Richardson, 260
(Cruciferae), The North American Representatives of Smelowskia, 85
Cruciferae of the Nashville Basin, Tennessee, Some, 182
Ctenidium procerrimum, 51
Cuscuta campestris, 257
Cymopterus macrorhizus, 128
Cynosurus cristatus, 224
Cyperus Grayii, 167
Cypripedium calceolus, 201; reginae, 209
Cystopteris Dickieana, 164; fragilis, 48, 164; montana, 141

Davies, P. A., Geographical Variations in Shortia galacifolia, 121
Dayton, W. A., Some Notes on United States Tree Names, 67
Decodon verticillatus, 250
Delphinium exaltatum, 253
Dentaria digitata, 260
Deschampsia brevifolia, 51
Digitaria violascens, 125
Distribution of Arnica Wilsonii Rydberg and Its Significance, The, 200
Dobbs, R. J., New Plant Records in Illinois, 307
Draba, 41; alpina, 49, 52, 54, 216; var. nana, 49, 52; cinerea, 279; crassa, 7; fladnizensis, 49, 52, 216, 279; hirta, 52, 216, 279; norvegica, 222, 226
Drepanocladus revolvens, 158
Drury, W. H. Jr. and Rollins, R. C., The North American Representatives of Smelowskia (Cruciferae), 85
Dryas integrifolia, 40, 49, 53, 216; f. intermedia, 53, 285; octopetala, 285; cf. octopetala, subsp. punctata, 285
Dryopteris celsa, 166; marginalis, 166; thelypteris var. pubescens, 209
Dulichium arundinaceum, 254
Dupontia fisheri, 40, 41
Dupree, A. H., Thomas Nuttall's Controversy with Asa Gray, 293

Eaton, R. J., A New Color Form of Polygala paucifolia, 27; Persistence of Color Forms of Polygala paucifolia, 27; Status of Phragmites communis Trin., var. Berlandieri (Fourn.) Fernald along the Sudbury River in Eastern Massachusetts, 135
Echinacea purpurea, var. arkansana, 130
Echinodorus tenellus, 250, 251
Edible Mushrooms (Review), 120
Effect of Forced Aeration on the Longevity of Laminaria, The, 288
Eichornia, 287
Elaeagnus angustifolia, 307
Elatine minima, 227
Eleocharis acicularis, 167; albida, 168; cellulosa, 168; elliptica, 164; equisetoides, 258; melanocarpa, 168; microcarpa, 168; var. filiculmis, 169; nitida, 225; parvula, 169; pauciflora var. Fernaldii, 222, 224; Robbinsii, 169; tenuis var. pseudoptera, 169; tortilis, 169
Elymus, 290; arenarius, 208; mollis, 40
Empetrum nigrum, 226; var. hermaphroditum, 53; f. **ciliatum,** 38
Epifagus virginiana, 140; f. **atropurpurea,** 140; f. pallida, 140
Epilobium coloratum, 254
Erechtites hieracifolia var. intermedia, 130; var. praealta, 130
Erigeron alaskanus f. **albiflorus,** 39; eriocephalus, 280; humilis, 280; philadelphicus, 227; unalaschkensis, 280; uniflorum, 280

Eriophorum, 40

Ermania, 86, 88, 110; borealis, 86, 112; Parryoides, 88

Eryngium maritimum, 175; prostratum, 175, 176

Erysimum inconspicuum, 254

Eucalyptus, 303

Euglyceria, 198

Eupatorium capillifolium, 130; cuneifolium, 179; Mohrii, 179; oliganthes, 232; perfoliatum, 254; var. cuneatum, 210; resinosum, 179

Euphorbia, 287; esula, 255; missurica var. **calcicola,** 127

Euphrasia, L. Studies in the Genus III, 145

Euphrasia arctica, 145, 146, 147, 148, 150, 151, 153, f. minutissima, 153; var. arctica, 149; 151; var. **inundata,** 153; var. minutissima, 153; var. **obtusata,** 152; var. **stromoensis,** 154; var. **submollis,** 153, 155; brevipila, 148, f. subeglandulosa, 148; var. notata, 148; curta, 148; f. glabrescens, 148; var. glabrescens, 148; disjuncta, 146; eurycarpa, 150, 153; foliosa, 148; foulaensis, 154; frigida, 147, 148, 149, 150, 152, 155; f. eglandulosa, 150; var. attenuata, 153; var. inundata, 153, var. laxa, 149, 152; var. minutissima, 149; var. obtusata, 149; var. palustris, 149, 155; var. vel. f. purpurea, 150, 155; var. pusilla, 153; var. stromoensis, 154; var. subcurta, 147, 149, 151; kashmiriana, 148; latifolia, 145, 146, 147, 148, 149, 151, 152, 154, 155; var. inundata, 149, 153; var. obtusata, 152; var. subcurta, 147, 151; var. subfoulaensis, 154; var. submollis, 150, 153; marshallii, 147, 148, 149, 151; var. pygmaea, 153; micrantha, 154; minima, 149, 152, 155; var. palustris, 149; var. pilosa, 155; officinalis var. latifolia, 146, 151; platyphylla, 148, purpurea, 146, 148; var. randii, 146; scotica, 154; williamsii, 148; var. vestita, 146;

Eurhynchium Stokesii, 158

Euthamia leptocephala, 130

Eutrema edwardsii, 49, 52, 216; penlandii, 141

Evans, A. W., Cladonia ecmocyna in North America, 261

Evolution of Plant Species, Stages in the (Review), 140

Ewan, J., Nuttall's Diary of 1810 and some Inquirendae (Review), 234

Fagus grandifolia, 64

Farsetia triquetra, 184

Fassett, N. C., Temporal Variation, 303; Uses of Cellulose Acetate in the Herbarium, 286

Festuca altaica f. **vivipara,** 36, f. **pallida,** 36; prolifera, 221; var. lasiolepis, 221

Filipendula rubra, 254, 259

Fimbristylis autumnalis f. brachyactis, 126

Fissidens cristatus f. **immarginata,** 156

Flora of Alaska, Some New Entities in the Flora of the Brooks Range Region, Alaska, 35

Flora of Nova Scotia, Contributions to, 220

Flowering Arundinaria gigantea in Illinois, 82

Fox, W. B., Godfrey, R. K., and Blomqjist, H. L., Notes on Distribution of North Carolina Plants—III, 165

Frasera carolinensis, 176

Fuirena simplex, 254

Further Studies of the Oklahoma Flora, 125

Gaiser, L. O., Some Rarely Collected Mexican Brickellias, 229

Galium mollugo, 307

Gaylussacia baccata f. glaucocarpa, 210

Gentiana glauca f. **chlorantha,** 38

Genus Tovara (Polygonaceae), The, 19

Geographical Variations in Shortia galacifolia, 121

Geranium maculatum, 64, 303

Gerardia pectinata, 129
Geum rivale, 209
Giguere, P., Krochmal, S. B., and Riel, A., Hodgdon, A. R., New Potamogeton Records in New Hampshire, 237
Glaux maritima var. obtusifolia, 203
Glyceria, 42, 43, 44, 45, 197, 198; acutiflora, 26, 27; borealis, 26; californica, 44; canadensis, 43; erecta, 43, 44; fernaldii, 43, 44; fluitans, 26, 27, 224; natans, 44; otisii, 44; pallida, 42, 43, 197; paucifolia, 43, 44; septentrionalis, 26, 27; striata, 43; viridis, 44
Glyceria septentrionalis and G. acutiflora in Lee, New Hampshire, 25
Gnaphalium falcatum, 181
Godfrey, R. K., Blomquist, H. L., Fox, W. B., Notes on Distribution of North Carolina Plants—III, 165
Gratiola viscidula, 258; Shortii, 258
Gray, Thomas Nuttall's Controversy with Asa, 293
Great Plains Species of Cirsium: C. undulatum and C. canescens, Nuttall's, 29
Gymnomitrium corallioides, 141

Habeeb, H., Nomenclatural and Other Notes on Mosses, II, 156
Habenaria psycodes, 252
Halimolobos, A Note on, 161
Halimolobos, Berlandieri, 162; hispidula, 162; mollis, 162, 163; perplexa, 162; virgata, 161, 162, 163
Hamamelis virginiana, 64
Haplodon wormskjoldii, 277
Hardy, J. W., Rudbeckia amplexicaulis Vahl. in Southern Illinois, 119
Hedyotis boscii, 129
Helenium autumnale, 254
Helianthus hirsutus var. trachyphyllus, 131
Hepatica americana, 64
Herbarium of New Salem, Massachusetts, An Old Local, 80
Herbarium, Uses of Cellulose Acetate in the, 286
Hermidium alipes var. **pallidum,** 158
Hermidium (Nyctaginaceae) and Astragalus (Leguminosae) from Eastern Utah, Novelties in, 158
Hesperis matronalis, 253
Heterotheca subaxillaris, 307
Heuchera sanguinea, 256
Hibiscus militaris, 174; palustris, 174
Hieracium, 14, 17; greenei, 73; greenii, 73; gronovii var. foliosum, 131
Hierochloe alpina, 277
Hodgdon, A. R., Glyceria septentrionalis and G. acutiflora in Lee, New Hampshire, 25
Hodgdon, A. R., Giguere, P., Krochmal, S. B., and Riel, A., New Potamogeton Records in New Hampshire, 237
Holosteum umbellatum, 253
Hottonia inflata, 258
Howard, R. A., The White Form of the Fringed Polygala in New Hampshire, 292
Hutchinsia calycina, 98; β americana, 99; var. integrifolia, 102
Hydrangea quercifolia, 256
Hydropoa, 198
Hydrophyllum appendiculatum, 257; f. **album,** 257
Hygrohypnum Bestii, 156, 157; molle, 156, 157; var. **Bestii,** 156, 157
Hylocomium brevirostre, 157
Hypericum aspalathoides, 206, 207; boreale, 307; canadense, 256, 307; dissimulatum, 307; fasciculatum, 206, 207; foliosum, 206; galioides, 207; var. aspalathoides, 207; var. fasciculatum, 207; var. **Lloydii,** 207; var. reductum, 207; mutilum, 307; perforatum, 128; prolificum, 205, 206, Plate 1187; tubulosum var. walteri, 128
Hypericum prolificum? What is, 205
Hypnum Bestii, 156; turgescens, 157
Hyypio, P. A., Antennaria rosea Greene in the Lake Superior Region, 291

Illinois, New Plant Records for, 307; and to the Chicago Region, Plants New to, 208; Flowering Arundinaria gigantea in, 82; Rudbeckia amplexicaulis Vahl in Southern, 119
Inquirendae, Nuttall's Diary of 1810 and some (Review), 234
Ipomoea heptaphylla, 128
Isatis, 183
Isoetes, 25, 287

Jacquemontia tamnifolia, 177
Jatropha, 173
Jordal, L. H., Some New Entities in the Flora of the Brooks Range Region, Alaska, Contributions to the Flora of Alaska, No. 2, 35
Juglans nigra f. oblonga, 253
Juncus, 287; balticus var. littoralis, 203; coriaceus, 193; filipendulus, 126; gerardii, 202; leptocaulis, 126; repens, 126; setaceus, 193; stygius var. americanus, 226; tenuis f. discretiflorus, 252
Juncus coriaceus, Notes concerning, 193
Juniperus, 303; virginiana, 251

King, J. W., The Effects of Forced Aeration on the Longevity of Laminaria, 288
Krochmal, S. B. and Riel, A., Hodgdon, A. R., Giguere, P.. New Potamogeton Records in New Hampshire, 237

Lactuca hirsuta, 259; var. sanguinea, 259
Lake Superior Region, Antennaria rosea Greene in the, 291
Lakela, O., Previously Unreported Plants from Minnesota, 163
Laminaria, The Effect of Forced Aeration on the Longevity of, 288
Laminaria Agardhii, 289; Agarum, 276
Lappula Redowskii var. occidentalis, 210
LaRue, C. D., The Propagation of the Camperdown Elm, 55, 56
Lathyrus japonicus, 203; maritimus, 203
Leavenworthia aurea, 182; stylosa, 182; torulosa, 182; uniflora, 182
Leconora elegans, 277
Lechea villosa, 174
Lee, New Hampshire, Glyceria septentrionalis and G. acutiflora in, 25
Leersia oryzoides, 254
Leiophyllum buxifolium var. Hugeri, 176
Lemna minor, 135; perpusilla, 306
Leontodon palustre, 50, 283
Lepidium calycinum, 98; campestre, 164
Lespedeza thunbergii, 255
Lesquerella arctica, 184, 216; auriculata, 184, 189, 191; condensata, 184; **densipila,** 184, 185, 186, 189, 191; var. densipila, 185, 186, 188, 189; var. **maxima,** 185, 189; globosa, 183, 184, 185, 191; grandifolia, 184; Lescurii, 183; 184, 185, 186; occidentalis, 184; **perforata,** 184, 185, 187, 189, 190, 191; utahensis, 184
Li, H., The Genus Tovara (Polygonaceae), 19
Lindera melissaefolium, 251
Linum lepagei, 200; lewisii, 200
Liparis lilifolia, 134, 211; Loeselii, 259
Liriodendron Tulipifera, 64
Little, E. L., Preparing Specimens of Picea and Tsuga, 232
Litorella americana, 227
Lobelia Boykini, 179; cardinalis, 259; siphilitica, 254, 259; × L. cardinalis, 259; spicata var. leptostachys, 129
Loiseleuria procumbens, 48, 49, 53
Lonchophaca macra, 160
Lonicera morrowi, 210, 259; xylosteum, 210
Lophotocarpus calycinus f. depauperatus, 251
Ludwigia brevipes, 176
Luzula, 40; hyperborea, 54; nivalis, 54; sudetica, 141
Lychnis apetala, 49, 51, 216, 278
Lycopodium inundatum, 208, 213; tristachyum, 165
Lysimachia quadriflora, 257; f. **albescens,** 257
Lythrum alatum, 254

Maianthemum canadense, 64; var. interius, 209
Manchester Museum, Perlustrationes Plantarum Arcticarum II: 'Parry Plants' in the, 45
Manfreda virginica, 172
Massachusetts, An Old Local Herbarium of New Salem, 80; Status of Phragmites communis Trin., var. Berlandieri (Fourn.) Fernald along the Sudbury River in Eastern, 135
May-apple, Color-forms of the, 131
Melanidion, 86, 87, 88, 92, 110; boreale, 86, 87, 88, 112
Mertensia maritima, 40, 203
Mexican Brickellias, Some Rarely Collected, 229
Mexico, Tovara in, 305
Minnesota, Previously Unreported Plants from, 163
Mirabilis gigantea, 127
Missouri Plant Records (1949–1951), New, 250
Morphological Analysis in Population Studies, A Technique for, 217
Mosses, II, Nomenclatural and Other Notes on, 156
Mushrooms, Edible (Review), 120
Myriandra brachyphylla, 207; Brathydis, 207; galioides, 207; Michauxii, 207; prolificum, 206; spathulata, 206
Myriophyllum exalbescens, 203
Myurella Careyana var. **tenella**, 156

Najas flexilis, 224
Nashville Basin, Tennessee, Some Cruciferae of the, 182
New Color Form of Polygala paucifolia, A, 27
New Hampshire, Glyceria septentrionalis and G. acutiflora in Lee, 25; New Potamogeton Records in, 237; The White Form of the Fringed Polygala in, 292
New Missouri Plant Records (1949–1951), 250
New Names for Wyoming Wheatgrasses, 195
New Plant Records for Illinois, 307
New Potamogeton Records in New Hampshire, 237
New Salem, Massachusetts, An Old Local Herbarium of, 80
Nomenclatural and Other Notes on Mosses, II, 156
North America, Cladonia ecmocyna in, 261
North American Representatives of Smelowskia (Cruciferae), The, 85
North Carolina Plants, Notes on Distribution of, III, 165
Note on the Plants of Vinland the Good, A Further, 289
Note on Halimolobos, A, 161
Notes Concerning Juncus coriaceus, 193
Notes on Distribution of North Carolina Plants, III, 165
Notes on the Genus Carex I: A New Species of Carex from Western Canada, 246
Nova Scotia, Contributions to the Flora of, 220
Novelties in Hermidium (Nyctaginaceae) and Astragalus (Leguminosae) from Eastern Utah, 158
Nuphar ovatum, 127
Nuttall's Controversy with Asa Gray, Thomas, 293; Diary of 1810 and some Inquirendae (Review), 234; Great Plains Species of Circium: C. undulatum and C. canescens, 29
Nymphaea odorata, 135
Nyssa aquatica, 258

Oakesia, 58; sessilifolia, 63
Oakesiella, 58
Oenothera perennis, 164, 256
Oklahoma Flora, 125
Oldenlandia Boscii, 251
Old Local Herbarium of New Salem, Massachusetts, An, 80
Oncophorus polycarpus, 157
Ontario, I, The Genus Uvularia in Southern Ontario, Phytogeographic Studies in, 57
Ophioglossum vulgatum var. pseudopodum, 211
Orthotrichum microblepharum, 158

Ownbey, G. B., Nuttall's Great Plains Species of Cirsium: C. undulatum and C. canescens, 29
Oxford, Perlustrationes Plantarum Arcticarum IV, 'Parry Plants' Added to the University Herbaria, 271
Oxyria digyna, 51, 222, 278, 282; reniformis, 51, 278
Oxytropis, 35; maydelliana, 280

Paeonia brownii, 236; californica, 236
Panax quinquefolius, 175
Panicum gymnocarpon, 125
Papaver, 50; macounii, 279; nudicaule, 51, 216, 278, 283; radicatum, 40, 49, 51, 54, 216, 278, 279, 283
Parentucellia latifolia, 145
Parnassia grandifolia, 254
Parrya, 88
'Parry Plants,' Perlustrationes Plantarum Arcticarum II, in the Manchester Museum, 45; III, in the Possession of the Royal Geographical Society, London, 213; IV, Added to the University Herbaria, Oxford, 271
Parthenium, 17; argentatum, 8
Paspalum pubiflorum var. glabrum, 125; var. pubiflorum, 125
Pease, A. S., A Color-form of Beech-drops, 140
Pedicularis canadensis f. **albescens,** 258; f. bicolor, 258; f. flava, 258; f. praeclara, 258; capitata, 217; hirsuta, 49, 53, 55, 280, 283; lanceolata, 254; nelsonii, 217
Perlustrationes Plantarum Arcticarum II: 'Parry Plants' in the Manchester Museum, 45; III, in the Possession of the Royal Geographical Society, London, 213; IV, Added to the University Herbaria, Oxford, 271
Persicaria filiformis, 23; neofiliforme, 23; virginiana, 21
Persistence of Color Forms of Polygala paucifolia, 27
Petasites frigidus, 40
Phippsia, 142, 143, 144, 145; algida, 40, 41, 141
Phippsia algida in the United States, 141
Phlox **alaskensis,** 38, 39; caespitosa, 39; divaricata, 27, maculata, 254; Richardsonii, 39; sibirica, 39; variabilis, 39
Phragmites communis Trin., var. Berlandieri (Fourn.) Fernald along the Sudbury River in Eastern Massachusetts, Status of, 135
Phragmites communis, 137; var. Berlandieri, 135, 136
Physostegia angustifolia, 129, 258
Phytogeographic Studies in Ontario I, The Genus Uvularia in Southern Ontario, 57
Picea, 232, 233, 234
Picea and Tsuga, Preparing Specimens of, 232
Pinus, Plate 1184; attenuata, 73, 74; australis, 69; Banksiana, 7; benthamiana, 73; bracteata, 74, 75, 76; californiana, 71, 72, 73, 74; californica, 72, 73, 74; Cedrus, 67, 68; cembra, 72; echinata, 68, 71; glabra, 67, 68, 70, 71; lutea, 67, 68, 69, 71; maritima, 72; palustris, 67, 68, 69, 70, 71; pinaster, 72; pinea, 68; ponderosa, 73; serotina, 68; squarrosa, 67, 68, 71; taeda, 68, 69; tuberculata, 73, venusta, 74, 76
Plantago juncoides, 203
Plants New to Illinois and to the Chicago Region, 208
Platypetalum dubium, 283; purpurascens, 52, 54
Pleuropogon sabinii, 48, 278
Poa, 14, 198; abbreviata, 35, 51, 282; alsodes, 224; angustata, 278; annua, 142; arctica, 40, 41, 51, 54, 278, 282; eminens, 202; glauca, 221
Podophyllum peltatum, 132, 303; f. **biltmoreanum,** 134; f. Daemii, 131, 133
Podostemum, 26
Podostigma pedicellata, 176; pubescens, 177
Pohlia cruda, 48, 51; longicolla, 157
Point Barrow, Alaska, Cochlearia officinalis arctica in the Vicinity of, 40

Polunin, N., Canada's Centenarian Botanist, 194; Perlustrationes Plantarum Arcticarum II: 'Parry Plants' in the Manchester Museum, 45; III, in the Possession of the Royal Geographical Society, London, 213; IV, Added to the University Herbaria, Oxford, 271
Polygala in New Hampshire, The White Form of the Fringed, 292
Polygala paucifolia, A New Color Form of, 27
Polygala paucifolia, Persistence of Color Forms, 27
Polygala paucifolia, 27, 28; f. alba, 28, 292; f. **caerulea,** 27, 28, 292; sanguinea f. albiflora, 255
(Polygonaceae), The Genus Tovara, 19
Polygonatum biflorum, 252
Polygonum, 19; apoënse, 25; cuspidatum, 209; filiforme, 23; hydropiperoides var. bushianum f. **rubrum,** 126; muticum, 21; neofiliforme, 23; sagittatum, 126; setaceum var. tonsum, 253; virginianum, 21, 23; var. filiforme, 23; viviparum, 49, 51, 54, 278, 283, 285
Population Studies, A Technique for Morphological Analysis in, 217
Populus, 303; balsamifera, 209; candicans, 209; grandidentata, 64; × Jackii, 209, 212
Porter, C. L., Novelties in Hermidium (Nyctaginaceae) and Astragalus (Leguminosae) from Eastern Utah, 158
Potamogeton Berchtoldi, 244; var. polyphyllus, 244; confervoides, 238, 239, 240, 241, 242, 243; epihydrus var. nuttallii, 250; filiformis, 203; var. borealis, 223; nodosus, 245; obtusifolius, 244; panormitanus, 137; pectinatus, 238, 239; perfoliatus var. bupleuroides, 246; pulcher, 245; pusillus, 137; Richardsonii, 245, 246; Spirillus, 223; Tuckermani, 240; vaseyi, 245; zosteriformis, 244
Potamogeton Records in New Hampshire, New, 237
Potentilla anserina, 202; emarginata, 40, 41; var. typica, 55, 283; hyparctica, 55, 283; cf. hyparctica, 285; nivea, 280, 282, 283; pulchella, 49, 52; vahliana, 280
Prenanthes trifoliata, 181
Preparing Specimens of Picea and Tsuga, 232
Previously Unreported Plants from Minnesota, 163
Propagation of the Camperdown Elm, The, 55
Prunella vulgaris var. lanceolata f. candida, 258
Prunus cuneata, 173; injucunda, 173; mitis, 172; pumila, 173; serotina, 64; susquehanae, 173; virginiana, 255; f. deamii, 254
Ptelea trifoliata f. pubescens, 209
Pteridium aquilinum var. latiusculum, 64
Ptilota plumosa, 276
Puccinellia, 42, 43, 44, 45, 197, 198, 199; angustata, 278; distans, 43, 198; grandis, 198; **pallida,** 44; paupercula, 40
Puccinellia, Suggestion for the Assignment of Torreyochloa to, 42
Pycnanthemum virginianum, 254
Pyrola grandiflora, 49

Quercus alba, 64, 132, 134; ellipsoidalis, 134; × hawkinsiae, 76, 77; × hawkinsi, 76; palustris, 304; × porteri, 77; rubra, 64, 303; × runcinata, 212; velutina f. macrophylla, 253; virginiana var. eximea, 77; var. eximia, 77

Ranunculus abortivus, 64; gelidus, 141; Harveyi, 132; nivalis, 49, 51, 216; pygmaeus, 141; sceleratus, 226; sulphureus, 49, 51, 54, 216
Rhabdoweisia denticulata, 157
Rhacomitrium heterostichum var. sudeticum, 157
Rhamnus caroliniana var. mollis, 127
Rhus copallina, 79; copallinum, 79; glabra, 303; radicans var. Rydbergii, 64; typhina, 303

Rhynchospora capillacea f. leviseta, 222; debilis, 170; macrostachya var. colpophila, 170; mixta, 170; pleiantha, 170
Riel, A., Hodgdon, A. R., Giguere, P., Krochmal, S. B. and, New Potamogeton Recirds in New Hampshire, 237
Robinia hispida, 255
Rollins, R. C., Arizona Flora (Review), 83; Cardamine digitata Richardson (Cruciferae), 260; A Note on Halimolobos, 161; Some Cruciferae of the Nashville Basin, Tennessee, 182; Stages in the Evolution of Plant Species (Review), 140; Taxonomy Today and Tomorrow, 1
Rollins, R. C. and Drury, W. H. Jr., The North American Representatives of Smelowskia (Cruciferae), 85
Rosa multiflora, 254; setigera, 254; f. **alba** 254
Royal Geographical Society, London, Perlustrationes Plantarum Arcticarum III, 'Parry Plants' in the Possession of the, 213
Rubus, 14, 17; acaulis, 141; parviflorus, 236
Rudbeckia amplexicaulis, 119; umbrosa, 254
Rudbeckia amplexicaulis Vahl in Southern Illinois, 119
Ruellia strepens, 213, 258; f. **alba,** 258; f. cleistantha, 258

Sagina intermedia, 40
Sagittaria ambigua, 125; lancifolia, 125; latifolia f. hastata, 251; papillosa, 125
Salix, 14, 40; arctica, 49, 51, 54, 278; cordifolia, 51; glauca, 51; var. stenolepis, 49; herbacea, 54; polaris, 54, 285; subsp. pseudopolaris, 54, 285
Salvia azurea, 177; sylvestris, 210
Santolina chamaecyparissus, 181
Saponaria vaccaria, 127
Sarracenia purpurea f. heterophylla, 226; var. terrae-novae f. heterophylla, 226
Sassafras albidum, 64, 132
Saxifraga aizoides, 222, 279; Aizoon var. neogaea, 227; caespitosa f. uniflora, 49, 52, 54, 216; subsp. eucaespitosa f. uniflora, 279, 283; cernua, 49, 52, 54, 216, 283; flagellaris, 48, 49, 52, 54, 283, 285; foliolosa, 49, 52, 54, 283; hieracifolia, 54, 282, 283; cf. hieracifolia × nivalis, 283; hirculus, 280; var. propinqua, 49, 52, 216; hyperborea, 54; nivalis, 49, 52, 54, 283; var. tenuis, 54; oppositifolia, 49, 52, 216, 280; rivularis, 40, 41, 52, 54; stellaris var. comosa, 49, 52, 283; tenuis, 54; tricuspidata, 216, 280; uniflora, 54, 283
Schizaea pusilla, 223
Schofield, W. B., and Smith, E. C., Contributions to the Flora of Nova Scotia, 220
Scirpus americanus, 203; atrovirens f. sychnocephalus, 251; cespitosus var. callosus, 221; var. delicatulus, 221; etuberculatus, 258; hallii, 251; paludosus, 208; rufus, 202
Scleria paucifolia var. caroliniana, 126
Scrophularia lanceolata, 177
Scutellaria nervosa f. **alba,** 257
Sedum acre, 256
Seymour, F. C., The Type of Ulmus americana, 138
Sharp, A. J., Tovara in Mexico, 305
Shortia galacifolia, 121, 122, 123, 124; var. **brevistyla,** 124
Shortia glacifolia, Geographical Variations in, 121
Sida rhombifolia, 127; spinosa, 127
Sisymbrium, 162, 183; virgatum, 163
Smelowskia americana, 99; **borealis,** 87, 88, 89, 91, 93, 94, 96, 110, 111, Plate 1186, 118; var. borealis, 91, 93, 110, 111, 112, 115, 116, 117, 118; var. **Jordalii,** 91, 93, 112, 115, 116, 117, 118; var. **Koliana,** 91, 93, 110, 111, 114, 115, 116, 117; var. **villosa,** 88, 89, 90, 91, 93, 95, 112, 114, 115, 116; calycina, 85, 86, 87, 88, 90, 91, 93, 96, 97, 98, 101, 110, Plate

1185; subsp. integrifolia, 86, 95, 102; var. **americana,** 88, 89, 90, 91, 92, 93, 94, 95, 98, 99, 101, 110; var. calycina, 90, 98, 101; var. glabrata, 90; prol. americana, 99; prol. americana f. integrifolia, 102; var. integrifolia, 85, 91, 93, 94, 98, 101, 102, 105, 110; var. **media**, 91, 93, 94, 98, 100, 101; var. pectinata, 90; var. **Porsildii,** 91, 93, 94, 98, 105, 109; Holmgrenii, 85, 93, 94, 96, Plate 1185; leneariloba, 99; f. virescens, 99; lobata, 99; ovalis, 85, 86, 87, 88, 93, 94, 95, 96, 107, 110, Plate 1185; var. congesta, 93, 107; var. ovalis, 93; **pyriformis,** 86, 87, 88, 93, 94, 96, 108, 109, 110, 115
Smelowskia (Cruciferae), The North American Representatives of, 85
Smilacina stellata var. crassa, 226
Smith, E. C. and Schofield, W. B., Contributions to the Flora of Nova Scotia, 220
Smith, L. B., Borrichia frutescens from Chesapeake Bay, 56
Solidago multiradiata, 228; patula, 254; rigida, 180; rugosa var. aspera, 131; var. celtidifolia, 131; sciaphila, 180; sempervirens, 210; var. mexicana, 210; uliginosa, 180; var. terrae-novae, 222
Some New Entities in the Flora of the Brooks Range Region, Alaska, Contributions to the Flora of Alaska, No. 2, 35
Some Notes on United States Tree Names, 67
Some Rarely Collected Mexican Brickellias, 229
Soper, J. H., Phytogeographic Studies in Ontario, I, The Genus Uvularia in Southern Ontario, 57
Sparganium hyperboreum, 223; minimum, 223
Sphaeralcea ambigua, 84
Splachnum wormskjoldii, 277
Sporobolus asper var. pilosus, 125
Stages in the Evolution of Plant Species (Review), 140
Status of Phragmites communis Trin., var. Berlandieri (Fourn.) Fernald along the Sudbury River in Eastern Massachusetts, 135
Stellaria edwardsii, 51; humifusa, 40, 41, 54; longipes, 51
Stenophyllus barbatus, 170
Steyermark, J. A., Color-forms of the May-apple, 131; New Missouri Plant Records (1949–1951), 250
Steyermark, J. A., and Swink, F. A., Plants New to Illinois and to the Chicago Region, 208
Studies in the Genus Euphrasia L., III, 145
Suckleya suckleyana, 126
Sudbury River in Eastern Massachusetts, Status of Phragmites communis Trin., var. Berlandieri (Fourn.) Fernald along the, 135
Suggestion for the Assignment of Torreyochloa to Puccinellia, 42
Svenson, H. K., A Further Note on the Plants of Vinland the Good, 289; What is Hypericum prolificum?, 205
Swertia carolinensis, 64, 176
Swink, F. A., and Steyermark, J. A., Plants New to Illinois and to the Chicago Region, 208

Tanacetum huronense, 201, 236
Taraxacum phymatocarpum, 50, 283
Taxonomy Today and Tomorrow, 1
Technique for Morphological Analysis in Population Studies, A, 217
Temporal Variation, 303
Tennessee, Some Cruciferae of the Nashville Basin, 182
Tetraplodon mnioides, 277; var. urceolatus, 277; urceolatum, 277
Texas, Wolffia papulifera in, 306
Thalictrum confine, 201; dioicum, 64
Thismia americana, 211
Thlaspi, 183
Thomas, J. H., Cochlearia officinalis arctica in the Vicinity of Point Barrow, Alaska, 40
Tillaea aquatica, 227

Tolmiaea Menziesii, 256
Tomenthypnum nitens, 51
Torreyochloa, 43, erecta, 199; fernaldii, 199; natans, 199; otisii, 199; pallida, 197, 198, 199; paucifolia, 199; viridis, 199
Torreyochloa, The Genus, 197
Torreyochloa to Puccinellia, Suggestion for the Assignment of, 42
Tovara (Polygonaceae), The Genus, 19
Tovara **apoënsis, 21, 25,** 305; filiformis, 20, 23, 24, 25, 305; var. filiformis, 21, 23, 25; var. **kachina,** 21, **25,** 305; neofiliformis, 23, 24; ryukynensis, 23, 24; smaragdina, 23, 24; virginiana, 21, 24, 305; f. rubra, 22; var. apoënsis, 25; var. filiformis, 23; var. glaberrima, 21, 22; var. kachina, 25; var. virginiana, 21; f. rubra, 22
Tovara in Mexico, 305
Tragia linearifolia, 174
Tragopogon major, 260
Trapa natans, 135
Trautvetteria carolinensis, 212
Tree Names, Some Notes on United States, 67
Trifolium pratense f. leucochraceum, 209, 213, 255
Triglochin maritima, 203; palustris, 203
Trillium grandiflorum, 64; recurvatum, 126
Trisetum, spicatum, 224; var. maidenii, 277; var. molle, 224; var. pilosiglume, 224; subspicatum 277
Tsuga, Preparing Specimens of Picea and, 232
Tsuga, 232, 233, 234
Type of Ulmus americana, The, 138
Typha latifolia, f. ambigua, 221

Ulmus americana, 138, 139; f. laevior, 139; campestris, 138, 139; fulva, 139; glabra, 138; rubra, 139
Ulmus americana, The Type of, 138
Uniola laxa, 251
United States, Phippsia algida in the, 141
United States Tree Names, Some Notes on, 67
Use of Cellulose Acetate in the Herbarium, 286
Utah, Novelties in Hermidium (Nyctaginaceae) and Astragalus (Leguminosae) from Eastern, 158
Uvularia grandiflora, 57, 58, 59, 60, 61, 63, 64, 66; perfoliata, 57, 58, 59, 62, 63, 64, 65, 66; sessilifolia, 58, 59, 64, 65, 66
Uvularia in Southern Ontario, Phytogeographic Studies in Ontario, 1. The Genus, 57

Vaccinium chamissonis, 222; cespitosum, 227; corymbosum var. glabrum, 212; ovalifolium, 222; uliginosum var. alpinum, 53; vitis-idaea ssp. minus, 40
Valerianella bushii, 129; intermedia, 178; Locusta, 178; longiflora, 129; olitoria, 178; patellaria, 179; radiata var. Fernaldii, 179
Variation, Temporal, 303
Vernonia altissima var. taeniotricha, 213
Veronica polita, 129
Vesicaria arctica, 216; globosa, 191; ? Lescurii, 186; Shortii, 191
Viburnum acerifolium, 64; dentatum, 213; recognitum, 213, 307
Vicia dasycarpa, 209, 213
Vinland the Good, A Further Note on the Plants of, 289
Viola, 140; floridana, 174; papilionacea, 27; triloba f. **albida,** 256
Voigt, J. W., A Technique for Morphological Analysis in Population Studies, 217

Waterfall, U. T., Further Studies of the Oklahoma Flora, 125; Notes concerning Juncus coriaceus, 193
Weatherby, U. F., An Old Local Herbarium of New Salem, Massachusetts, 80
Weber, W. A., Phippsia algida in the United States, 141
Wheatgrasses, New Names for Wyoming, 195

White Form of the Fringed Polygala in New Hampshire, The, 292
White, W. L., Edible Mushrooms (Review), 120
Windsoria pallida, 44
Winterringer, G. S., Flowering Arundinaria gigantea in Illinois, 82
Wolffia columbiana, 137, 306; papulifera, 306
Wolffia papulifera in Texas, 306
Woodsia, 48, 164; alpina, 221; Belli, 221; glabella, 221, 222
Wyoming Wheatgrasses, New Names for, 195

Xanthium echinatum, 181

Zanichellia palustris var. major, 202
Zizania aquatica, 290
Zostera marina, 203

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